

IN THE CLAIMS:

1. (Original) An apparatus for remotely detecting a gas molecule comprising:
a diode laser for emitting radiation at a maximum absorption band of said gas molecule wherein said radiation is tunable by adjusting the temperature of said diode laser; and
a single mode fiber coupling to said diode laser for diminishing of spatial inhomogeneity of said radiation.
2. (Original) The apparatus as recited in Claim 1 wherein said gas molecule detector detects alcohol molecules.
3. (Currently Amended) The apparatus as recited in Claim 2 wherein said diode laser emits radiation near 1.392 ~~um~~ μm.
4. (Original) The apparatus as recited in Claim 1 wherein said gas molecule detector further comprises:
a first connection for a first current into the diode laser; and
a second connection for a second current adjusting the temperature of the diode laser.
5. (Original) The apparatus as recited in Claim 4 wherein said first current is a pulse with 3.6 ms period.
6. (Original) The apparatus as recited in Claim 4 wherein said second current is tunable for a maximum absorption band of said gas molecule.
7. (Currently Amended) The apparatus as recited in Claim 6 wherein said gas molecule is alcohol with an absorption band with Q-branch from 1.3924 – 1.3935 ~~um~~ μm.

8. (Original) The apparatus as recited in Claim 1 wherein said gas molecule detector further comprises:

an optical splitter receiving the emitted radiation and producing a first and second optical channels;

a first detector detecting the presence of said gas molecule from the first optical channel; and

a second detector for reference from the second optical channel.

9. (Original) The apparatus as recited in Claim 8 wherein said first detector detects the presence of alcohol molecules.

10. (Original) The apparatus as recited in Claim 8 wherein said second detector provides absorption reference of the content in a cell.

11. (Currently Amended) The apparatus as recited in Claim 10 wherein said cell contains a ~~predetermine~~ predetermined gas content.

12. (Currently Amended) The apparatus as recited in Claim 10 wherein said cell contains a ~~predetermine~~ predetermined water content.

13. (Original) The apparatus as recited in Claim 8 wherein said first optical channel capable of passing twice through an enclosure to be detected of said gas molecule, whereby the absorption of the gas molecule is amplified.

14. (Original) The apparatus as recited in Claim 8 wherein said second optical channel capable of passing twice through a cell having a predetermined second gas molecule content, whereby the absorption of said second gas molecule is amplified.

15. (Withdrawn)

16. (Withdrawn)

17. (Withdrawn)
18. (Withdrawn)
19. (Withdrawn)
20. (Withdrawn)
21. (Withdrawn)
22. (Withdrawn)
23. (Withdrawn)
24. (Withdrawn)
25. (Withdrawn)
26. (Withdrawn)
27. (Currently Amended) An apparatus for remotely detecting alcohol comprising:
a diode laser for emitting scanning radiation frequency at a maximum alcohol
absorption band wherein said radiation is tunable by adjusting the temperature of said
diode laser;
a first connector for a first current into the diode laser; and
a second connector for a second current adjusting the temperature of the diode
laser.
28. (Original) An apparatus for remotely detecting alcohol comprising:
a diode laser for emitting radiation at a maximum alcohol absorption band
wherein the radiation is tunable by adjusting the temperature of the diode laser;

an optical splitter receiving the emitted radiation and producing a first and second optical channels;

a first detector detecting the presence of a alcohol vapor from the first optical channel; and

a second detector for reference from the second optical channel.

29. (Original) An apparatus for remotely detecting alcohol comprising:

a diode laser for emitting radiation at a maximum alcohol absorption band wherein the radiation is tunable by adjusting the temperature of the diode laser;

an optical channel that pass through an enclosure to be detected of alcohol vapor twice, whereby the absorption of the alcohol vapor is amplified; and

a detector detecting the presence of a alcohol vapor from the optical channel.

30. (Currently Amended) An apparatus for remotely detecting a gas molecule comprising:

a diode laser for emitting radiation at a maximum absorption band if said gas molecule wherein said radiation is tunable by adjusting the temperature of said diode laser;

a single mode fiber coupling to the diode laser for diminishing of spatial inhomogeneity of the radiation;

a first connection for a first current into the diode laser;

a second connection for a second current adjusting the temperature of the diode laser;

an optical splitter receiving the emitted radiation and producing a first and second optical channels;

a first detector detecting the presence of said gas molecule from the first optical channel; and

a second detector for reference from the second optical channel.